

**1. Rejection of Claims 18-22, 25-27, 30, 32, 34, and 36-38
under 35 U.S.C. § 102(e)**

The Official Action states that claims 18-22, 25-27, 30, 32, 34, and 36-38 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,218,500 to Keute et al.

As the basis for this rejection, the Official Action states:

Keute et al. discloses a method of covering a floor with a composition falling within the scope of the instant claims. Organic solvent is not required and any ketone used is removed. The solids content falls within the scope of the instant claims. See the abstract; column 1, lines 44-55; column 3, lines 5-17; column 6, lines 40-45; column 9, lines 50-67; and the remainder of the document. Though "sports floor" is not specified, one can play "sports" on any floor. This preambular phrase therefore does not distinguish over the method of the instant claims. The patentee is silent regarding the particle size of the urethane disclosed therein. The burden is on the applicant to show that it does not inherently possess the instantly claimed particle size because its molecular weight and ionic group content would indicate that it would possess a very small particle size and dispersed urethanes are typically of 20 nm to 5 micrometers.

Applicants respectfully traverse this rejection. "The test for anticipation is whether each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed.

Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

The presently claimed invention relates to a method for making sports floors comprising the use of a formulation. The formulation of the present inventive methods comprises aqueous, iso-cyanate-free polyurethane dispersions having a solvent content of less than or equal to 10 percent by weight and a solid matter content of greater than or equal to 30 percent by weight.

The resins disclosed in Keute et al. are prepared by a process having five steps. This process leads to a polyurethane epoxy hybriide polymer which is processed using two different components. The reactive resin is prepared as follows:

1. Formulation of a urethane oligomer
2. Preparation of ketimine
3. Formation of ketimine-terminated urethane oligomer
4. Formation of an amine-terminated urethane oligomer
5. Formation of a Copolymer

Applicants respectfully submit that it is the use of the copolymer prepared from an amine-terminated urethane oligomer

and an epoxy resin that Keute et al. teaches as coating for floors (see col. 9, lines 41-67). This is in contrast to the present invention that uses aqueous, iso-cyanate-free polyurethane dispersions having a solid matter content of greater than or equal to 30 percent by weight. The present invention does not use any copolymers. Moreover, the present invention allows for application of only one component, which is not possible with the process disclosed in Keute et al.

Thus, the difference between the present invention and Keute et al. resides in the different structures of the polymer systems employed. Applicants respectfully submit that Keute et al. fails to disclose all of the limitations found in claim 18 and those claims that depend therefrom. As such, Applicants respectfully submit Keute et al. does not anticipate claims 18-22, 25-27, 30, 32, 34, and 36-38.

Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of claims 18-22, 25-27, 30, 32, 34, and 36-38.

2. Rejection of Claims 18-38 under 35 U.S.C. § 103(a)

The Official Action states that claims 18-38 are rejected under 35 U.S.C. § 103(a) as being obvious in view of U.S. Patent No. 6,218,500 to Keute et al.

As the basis for this rejection, the Official Action states:

Keute et al. discloses a method of covering a floor with a composition falling within the scope of the instant claims. Organic solvent is not required and any ketone used is removed. The solids content falls within the scope of the instant claims. See the abstract; column 1, lines 44-55; column 3, lines 5-17; column 6, lines 40-45; column 9, lines 50-67; and the remainder of the document. Though "sports floor" is not specified, one can play "sports" on any floor. This preamble phrase therefore does not distinguish over the method of the instant claims. The patentee is silent regarding the particle size of the urethane disclosed therein. The burden is on the applicant to show that it does not inherently possess the instantly claimed particle size because its molecular weight and ionic group content would indicate that it would possess a very small particle size and dispersed urethanes are typically of 20 nm to 5 micrometers.

It would have been obvious to one skilled in the art at the time of the instant invention to add the additives of the instant claims 24, 28, 29, 31, 34, 35 because these additives will give their well known properties to the polymer matrix of the patentee. It would have been obvious to one skilled in the art at the time of the instant invention to spray the coating of the patentee on the floor because this is a

conventional method of coating things with an aqueous dispersion. It would have been obvious to one skilled in the art at the time of the instant invention to use the composition of the patentee as an adhesive according to the instant claim 33 because it is known to be adhesive from column 1, lines 10-13 and its properties such as tensile strength and flexibility would have been expected in the laminate resulting therefrom. It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the molecular weight of the instant claim 23 because the patentee states that choice of molecular weight is within the ability of the ordinary skilled artisan at column 8, lines 42-48 and molecular weight gives only predictable properties such as viscosity by definition of viscosity average weight and modulus.

Applicants respectfully traverse this rejection. The reference of record does not teach or suggest applicants' inventive subject matter as a whole as recited in the claims. The Examiner has failed to establish a *prima facie* case of obviousness against the presently rejected claims.

To establish a *prima facie* case of obviousness, the PTO must satisfy three requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to

modify a reference. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Second, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *Amgen Inc. v. Chugai Pharm. Co.*, 18 U.S.P.Q.2d 1016, 1023 (Fed. Cir. 1991). Lastly, the prior art reference must teach or suggest all the limitations of the claims. *In re Wilson*, 165 U.S.P.Q.2d 494, 496 (C.C.P.A. 1970).

As stated above, the presently claimed invention relates to a method for a making sports floor covering comprising the use of a formulation. The formulation used in the present invention comprises aqueous, iso-cyanate-free polyurethane dispersions having a solvent content of less than or equal to 10 percent by weight and a solid matter content of greater than or equal to 30 percent by weight. The formulation used in the presently claimed invention provides sports floor coverings that exhibit improved mechanical properties such as tensile strength and elongation which are key properties for sports floor coverings (see page 6, lines 3-6 of the instant specification).

The resins disclosed in Keute et al. are prepared by a

process having five steps. This process leads to a polyurethane epoxy hybride polymer which is processed using two different components. The reactive resin is prepared as follows:

1. Formulation of a urethane oligomer
2. Preparation of ketimine
3. Formation of ketimine-terminated urethane oligomer
4. Formation of an amine-terminated urethane oligomer
5. Formation of a Copolymer

Applicants respectfully submit that it is the use of the copolymer prepared from an amine-terminated urethane oligomer and an epoxy resin that Keute et al. teaches as coating for floors (see col. 9, lines 41-67). This is in contrast to the present invention that uses aqueous, iso-cyanate-free polyurethane dispersions having a solid matter content of greater than or equal to 30 percent by weight. The present invention does not use any copolymers.

The König hardness of the urethane epoxy copolymers disclosed in the Keute et al. reference is mentioned in Tables 3 and 6 and the elongation range of these copolymers is mentioned in table 4. The high König hardness and an elongation range of 5 to 40% as described in table 4 of Keute et al. is in contrast to

the formulation examples D1 to D9 described in the present invention which have an elongation range of 200-600%. The elongation range of 5 to 40% as described in Keute et al. is completely insufficient for use as sports floor coverings.

Although it may be possible to have sports activity on any type of floor, not all floors can be designated as sports floors. For example, sport coatings applied to race tracks fulfill the specified requirements for the surface. In addition, all coating systems for sports floors marketed in Europe and the U.S. comply with DIN 18035, part 6 titled "Sportplätze, Kunststoffflächen" (sport fields, plastic surfaces). This requires an elongation break of at least 40%. This is in contrast to the teachings of an elongation range of 5 to 40% in Keute et al. It is clear to a person skilled in the art that the Keute et al. floor coatings are completely unsuitable for sports floors.

Further, ambient conditions play an important role in the application of sports floor coatings. The hardening time for complete curing of epoxies as described in Keute et al. is two weeks (see column 10, lines 1 to 7). A two week curing time is

not acceptable for a sports floor. In contrast, the drying and hardening time of the claimed inventive method is 2 to 6 hours only. Moreover, the present invention allows for application of only one component, which is not possible with the process disclosed in Keute et al.

The polyurethane systems of the present invention are superior to the copolymers of Keute et al. in view of their elongation, shorter required drying and hardening times, and the possibility of applying only one component. Thus, a person of ordinary skill in the art would not have been able to arrive at the presently claimed invention based on the teachings of Keute et al.

Furthermore, "in determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification." *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the molecular weights of claim 23 because Keute et al. states that the choice of molecular weight is within the ability of the ordinary skilled artisan (column 8, lines 42-48). While choice of molecular weight may be within the ability of

one skilled in the art, the Examiner has provided no evidence for any motivation for the ordinary skilled artisan to select the range of molecular weights of claim 23. Further, the Keute et al. reference teaches urethane oligomers preferably having an average molecular weight of 400 to 1200. The molecular weights of claim 23 are 25,000 to 100,000. Thus Keute et al. teaches away from the claimed range.

A *prima facie* case of obviousness has not been established because the cited reference does not teach or suggest each and every claimed limitation. Further, one of ordinary skill in the art would not have been motivated to modify the Keute et al. reference to make the presently claimed invention as alleged by the Examiner. Based on the copolymers disclosed in Keute et al., the elongation, shorter required drying and hardening times, and the possibility of applying only one component of the present invention would not have been obvious.

Accordingly, applicants respectfully request the Examiner to reconsider and withdraw the rejection of claims 18-38.

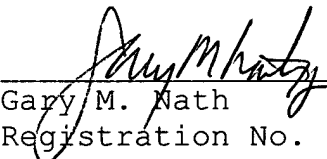
CONCLUSION

Claims 18-38 are currently pending in the present application. Applicants respectfully request the Examiner to reconsider and withdraw the rejections and allow all claims pending herein.

The Examiner is requested to contact the undersigned attorney if he has any questions or wishes to further discuss the merits of the presently pending claims.

Respectfully submitted,
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